WHAT IS CLAIMED IS:

1. An image matching method of detecting an approximate region approximated to a predetermined template image from an input image, comprising steps of:

generating a first input signal and a second input signal representing a pixel value of the input image respectively projected on a first axis and a second axis substantially perpendicular to the first axis;

detecting a first axis/first section including a region corresponding to the approximate region in a direction of the first axis based on a first template signal representing a pixel value of the template image projected on the first axis, and also based on the first input signal;

detecting a second axis/first section including a region corresponding to the approximate region in a direction of the second axis based on a second template signal representing a pixel value of the template image projected on the second axis, and also based on the second input signal;

generating a third input signal representing a pixel value of a candidate region image in the input image specified by the first axis/first section and the second axis/first section projected on the first axis; and

detecting a first axis/second section including a region corresponding to the approximate region in the direction of the first axis based on the first template signal and the third input signal.

2. The image matching method as claimed in claim 1, wherein, said candidate region signal generating step comprises a

step of generating a fourth input signal representing a pixel value of the candidate region image projected on the second axis, and

the image matching method further comprises a step of detecting a second axis/second section including a region corresponding to the approximate region in the direction of the second axis based on the second template signal and the fourth input signal.

3. The image matching method as claimed in claim 1, further comprising a step of generating the first template signal and the second template signal by respectively projecting the pixel value of the template image on the first axis and the second axis of the template image.

4. The image matching method as claimed in claim 1, wherein

said first axis/first section detection step comprises steps of: extracting an edge region where a level of the pixel value in the first template signal changes a lot; and extracting an edge region where the level of the pixel value in the first input signal changes a lot, and said first axis/first section detection step detects the first axis/first section based on the signal value of the edge region in the first template signal, and the signal value of the edge region in the first input signal, and

said second axis/first section detection step comprises steps of: extracting an edge region where a level of the pixel value in the second template signal changes a lot; and extracting an edge region where the level of the pixel value in the second input signal changes a lot, and said second axis/first section detection step detects the second axis/first section based on the signal value of the edge region in the second template signal, and the signal value of the edge region in the second input signal.

5. The image matching method as claimed in claim 4, wherein

said first template edge region extraction step comprises steps of differentiating a signal value of the first template signal, and extracting a coordinate, at which the absolute value of the once differentiated value is greater than a predetermined value, as the edge region,

said first input signal edge region extraction step comprises steps of differentiating a signal value of the first input signal, and extracting a coordinate, at which the absolute value of the once differentiated value is greater than a predetermined value, as the edge region,

said second template edge region extraction step comprises steps of differentiating a signal value of the second template signal, and extracting a coordinate, at which the absolute value of the once differentiated value is greater than a predetermined value, as the edge region, and

said second input signal edge region extraction step comprises steps of differentiating a signal value of the second input signal, and extracting a coordinate, at which the absolute value of the once differentiated value is greater than a predetermined value, as the edge region.

6. The image matching method as claimed in claim 4, wherein

said first template edge region extraction step comprises steps of: differentiating the signal value of the first template signal; detecting extremum points at which the once differentiated value takes an extremum; further differentiating the once differentiated value; and extracting a coordinates from a point at which the twice differentiated value takes a local minimum value to a point at which the twice differentiated value takes a local

maximum value including the extremum points of the once differentiated value, as the edge region,

said first input signal edge region extraction step comprises steps of: differentiating the signal value of the first input signal; detecting extremum points at which the once differentiated value takes an extremum; further differentiating the once differentiated value; and extracting coordinates from a point at which the twice differentiated value takes the minimum value to a point at which the twice differentiated value takes the maximum value including the extremum points of the once differentiated value, as the edge region,

said second template edge region extraction step comprises steps of: differentiating the signal value of the second template signal; detecting extremum points at which the once differentiated value takes an extremum; further differentiating the once differentiated value; and extracting coordinates from a point at which the twice differentiated value takes the minimum value to a point at which the twice differentiated value takes the maximum value including the extremum points of the once differentiated value, as the edge region, and

said second input signal edge region extraction step comprises steps of: differentiating the signal value of the second input signal; detecting extremum points at which the once differentiated value takes an extremum; further differentiating the once differentiated value; and extracting coordinates from a point at which the twice differentiated value takes the minimum value to a point at which the twice differentiated value takes the maximum value including the extremum points of the once differentiated value, as the edge region.

7. The image matching method as claimed in claim 1, wherein

said first axis/second section detection step comprises a step of extracting an edge region where a level of the pixel value in the third input signal changes a lot, so that the first axis/second section is detected based on the signal value of the edge region in the first template signal, and the signal value of the edge region in the third input signal.

8. The image matching method as claimed in claim 7, wherein

said first template edge region extraction step comprises steps of differentiating the signal value of the first template signal, and extracting a coordinate, at which the absolute value of the once differentiated value is greater than a predetermined value, as the edge region, and

said third input signal edge region extraction step comprises steps of differentiating the signal value of the third input signal, and extracting a coordinate, at which the absolute value of the once differentiated value is greater than a predetermined value, as the edge region.

9. The image matching method as claimed in claim 7, wherein

said first template edge region extraction step comprises steps of: differentiating the signal value of the first template signal; detecting extremum points at which the once differentiated value takes an extremum; further differentiating the once differentiated value; and extracting coordinates from a point at which the twice differentiated value takes a local minimum value to a point at which the twice differentiated value takes a local maximum value including the extremum points of the once differentiated value, as the edge region, and

said third input signal edge region extraction step comprises steps of: differentiating the signal value of the third input

signal; detecting extremum points at which the once differentiated value takes an extremum; further differentiating the once differentiated value; and extracting coordinates from a point at which the twice differentiated value takes a local minimum value to a point at which the twice differentiated value takes a local maximum value including the extremum points of the once differentiated value, as the edge region.

10. The image matching method as claimed in claim 1, wherein

said first axis/first section detection step comprises steps of: comparing the first template signal with the first input signal by scanning the first input signal for every range of a width of the template image in the direction of the first axis; and calculating a first correlation value indicating correlation between the first template signal and the first input signal, so that the first axis/first section is detected based on the first correlation value, and

said second axis/first section detection step comprises steps of: comparing the second template signal with the second input signal by scanning the second input signal for every range of a width of the template image in the direction of the second axis; and calculating a second correlation value indicating correlation between the second template signal and the second input signal, so that the second axis/first section is detected based on the second correlation value.

11. The image matching method as claimed in claim 10, wherein

said first axis/first section detection step detects a region including coordinates on the first axis, at which the first correlation value takes a local maximum value, as the first axis/first section, and

said second axis/first section detection step detects a region including coordinates on the second axis, at which the second correlation value takes a local maximum value, as the second axis/first section.

12. The image matching method as claimed in claim 10, wherein

said first axis/first section detection step detects a region including a coordinate, at which the local maximum value is greater than a predetermined threshold, among the coordinates at which the first correlation value takes the local maximum value, as the first axis/first section, and

said second axis/first section detection step detects a region including a coordinate, at which the local maximum value is greater than a predetermined threshold, among the coordinates at which the second correlation value takes the local maximum value, as the second axis/first section.

13. The image matching method as claimed in claim 1, wherein

said first axis/second section detection step comprises steps of: comparing the first template signal with the third input signal by scanning the third input signal for every range of a width of the template image in the direction of the first axis; and calculating a third correlation value indicating correlation between the first template signal and the third input signal, so that the first axis/second section is detected based on the third correlation value.

14. The image matching method as claimed in claim 2, wherein

said first axis/second section detection step comprises steps of: comparing the first template signal with the third input signal by scanning the third input signal for every range of a

width of the template image in the direction of the first axis; and calculating a third correlation value indicating correlation between the first template signal and the third input signal, so that the first axis/second section is detected based on the third correlation value, and

said second axis/second section detection step comprises steps of: comparing the second template signal with the fourth input signal by scanning the fourth input signal for every range of a width of the template image in the direction of the second axis; and calculating a fourth correlation value indicating correlation between the second template signal and the fourth input signal, so that the second axis/second section is detected based on the fourth correlation value.

15. An image matching apparatus for detecting an approximate region approximated to a predetermined template image from an input image, comprising:

input signal generating means for generating a first input signal and a second input signal representing a pixel value of the input image respectively projected on a first axis and a second axis substantially perpendicular to the first axis;

first axis/first section detecting means for detecting a first axis/first section including a region corresponding to the approximate region in a direction of the first axis based on a first template signal representing a pixel value of the template image projected on the first axis, and also based on the first input signal;

second axis/first section detecting means for detecting a second axis/first section including a region corresponding to the approximate region in a direction of the second axis based on a second template signal representing a pixel value of the template

image projected on the second axis, and also based on the second input signal;

candidate region signal generating means for generating a third input signal representing a pixel value of a candidate region image in the input image specified by the first axis/first section and the second axis/first section projected on the first axis; and

first axis/second section detecting means for detecting a first axis/second section including a region corresponding to the approximate region in the direction of the first axis based on the first template signal and the third input signal.

16. The image matching apparatus as claimed in claim 15, wherein

said candidate region signal generating means generates a fourth input signal representing a pixel value of the candidate region image projected on the second axis, and

the image matching apparatus further comprises second axis/second section detecting means for detecting a second axis/second section including a region corresponding to the approximate region in the direction of the second axis based on the second template signal and the fourth input signal.

17. The image matching apparatus as claimed in claim 15, further comprising template signal generating means for generating the first template signal and the second template signal by respectively projecting the pixel value of the template image on the first axis and the second axis of the template image.

18. A wafer processor for exposing a circuit pattern on a wafer, comprising:

input image acquiring means for acquiring an image including

a mark provided on the wafer as an input image;

storage means for storing a template image;

template signal generating means for generating a first template signal and a second template signal representing the pixel value of the template image stored in said storage means, respectively projected on a first axis and a second axis of the image, the second axis being substantially perpendicular to the first axis;

input signal generating means for generating a first input signal and a second input signal representing a pixel value of the input image respectively projected on the first axis and the second axis;

first axis/first section detecting means for detecting a first axis/first section including a region corresponding to the template image in a direction of the first axis based on the first template signal and the first input signal;

second axis/first section detecting means for detecting a second axis/first section including a region corresponding to the template image in a direction of the second axis based on the second template signal and the second input signal;

candidate region signal generating means for generating a third input signal representing a pixel value of a candidate region image in the input image specified by the first axis/first section and the second axis/first section projected on the first axis;

first axis/second section detecting means for detecting a first axis/second section including a region corresponding to the template image in the direction of the first axis based on the first template signal and the third input signal;

matching means for matching a determined region image in the input image specified by the first axis/first section with the template image, so as to detect a position of the wafer based

on the position of the mark on the wafer; and

moving means for moving the wafer based on the detected position of the wafer.

19. The wafer processor as claimed in claim 18, wherein

said candidate region signal generating means generates a fourth input signal representing a pixel value of the candidate region image projected on the second axis, and

the wafer processor further comprises second axis/second section detecting means for detecting a second axis/second section including a region corresponding to the approximate region in the direction of the second axis based on the second template signal and the fourth input signal.